

8-2 Practice

Parabolas

Write each equation in standard form.

1. $y = 2x^2 - 12x + 19$

2. $y = \frac{1}{2}x^2 + 3x + \frac{1}{2}$

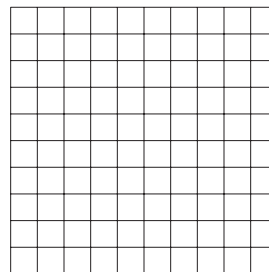
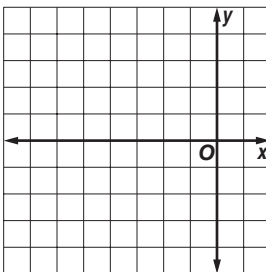
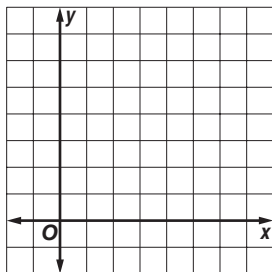
3. $y = -3x^2 - 12x - 7$

Identify the coordinates of the vertex and focus, the equations of the axis of symmetry and directrix, and the direction of opening of the parabola with the given equation. Then find the length of the latus rectum and graph the parabola.

4. $y = (x - 4)^2 + 3$

5. $x = -\frac{1}{3}y^2 + 1$

6. $x = 3(y + 1)^2 - 3$

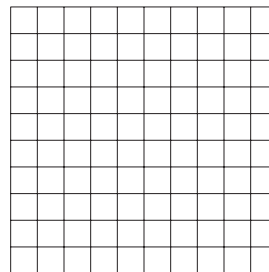
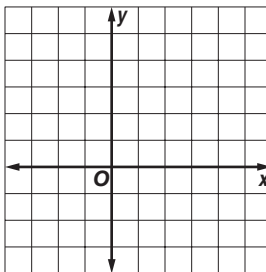
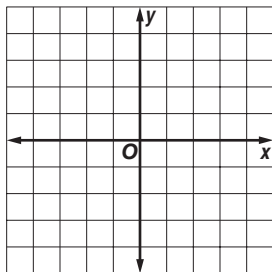


Write an equation for each parabola described below. Then draw the graph.

7. vertex $(0, -4)$,
focus $(0, -3\frac{7}{8})$

8. vertex $(-2, 1)$,
directrix $x = -3$

9. vertex $(1, 3)$,
axis of symmetry $x = 1$,
latus rectum: 2 units,
 $a < 0$



10. TELEVISION Write the equation in the form $y = ax^2$ for a satellite dish. Assume that the bottom of the upward-facing dish passes through $(0, 0)$ and that the distance from the bottom to the focus point is 8 inches.